BY ORDER OF THE COMMANDER
AIR FORCE MATERIEL COMMAND

AFMC INSTRUCTION 21-132

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Maintenance

DEPOT MAINTENANCE TECHNICAL

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction describes an internal review system for selected areas of depot maintenance industrial operations. It applies to all ALC depot maintenance production organizations. The Aerospace Maintenance and Regeneration Center (AMARC) will comply with this instruction when like industrial operations are performed. It implements the applicable portions of AFPD 21-1, *Managing Aerospace Equipment Maintenance*, and AFI 21-102, *Depot Maintenance Management*. It provides depot maintenance technical compliance oversight for AFMCI 21-107, *Tool Control and Accountability*, AFMCI 21-108, *Maintenance Training and Production Acceptance Certification (PAC) Program*, AFMCI 21-110, *Equipment Maintenance Technical Data and Work Control Documents*, AFMCI 21-115, *Depot Maintenance Quality Assurance (QA)*, AFMCI 21-122, *Foreign Object Damage (FOD) Prevention*, AFMCI 21-127, *Depot Maintenance Plant Management*, and AFMCI 21-130, *Equipment Maintenance Material Control*. When developing local procedures, bargaining obligations must be met with the respective local union.

SUMMARY OF REVISIONS

This instruction updates the previous edition of AFMCI 21-132 to incorporate revisions to the annual technical compliance review process and maintenance metrics in **Attachment 1**. The metrics are for center use and must be analyzed during the annual depot review with the results reported yearly to HQ AFMC. Reviews are still required on a yearly basis but may now be scheduled locally so they fall midway between HQ AFMC IG MSEP Inspections.

Section A—General

1. Introduction. This instruction provides guidance for reviewing and evaluating compliance with technical data, maintenance training and production acceptance certification (PAC), quality assurance (QA), and other procedures that impact product and process conformance throughout AFMC depot maintenance operations. The four areas evaluated are (1) technical data and work control documents (WCD), (2) personnel qualification and certification, (3) tools and equipment, and (4) process discipline.

2. Responsibilities.

2.1. HQ AFMC/LG (LGP) is the OPR for this instruction and the internal review program and is also responsible for performing the following actions:

2.1.1. Prepares Unit Compliance Inspection (UCI) checklists.

2.1.2. Reviews results of center AFMC Maintenance Standardization and Evaluation Program (MSEP) inspections and annual center technical compliance reviews for needed policy actions.

2.2. HQ AFMC IG is the OPR for the AFMC MSEP program and is also responsible for performing the following actions:

2.2.1. Prepares MSEP Checklists.

2.2.2. Conducts MSEP inspections of ALCs and AMARC using applicable MSEP checklists.

2.3. The Center/CC ensures compliance with this instruction as well as performing the following actions:

2.3.1. Reviews all MSEP and internal review results.

2.3.2. Periodically review the Center's technical compliance as reflected in the depot maintenance compliance metrics (**Attachment 1**).

2.4. The Center Quality Assurance (QA) Focal Point is the center manager for the technical compliance review program and is responsible for the following actions:

2.4.1. Prepares a local implementing instruction.

2.4.2. Assigns MSEP and UCI checklist OPRs as necessary.

2.4.3. Consolidates and reviews applicable metrics.

2.4.4. Plans and executes the annual review.

3. Checklists. As a minimum, the following depot maintenance MSEP and UCI checklists will be used for the annual reviews. The checklists can be found on the HQ AFMC Inspector General (IG) Homepage. Additional items and/or checklists can be added at local discretion.

3.1. Tool Control and Accountability (AFMCI 21-107)

3.2. Maintenance Training and Production Acceptance Certification (PAC) Program (AFMCI 21-108)

3.3. Depot Maintenance Technical Data and Work Control Documents (AFMCI 21-110)

3.4. Depot Maintenance Quality Assurance (QA) (AFMCI 21-115)

3.5. Foreign Object Damage (FOD) Prevention (AFMCI 21-122)

3.6. Depot Maintenance Plant Management (AFMCI 21-127) (MSEP & UCI)

3.7. Equipment Maintenance Material Control (AFMCI 21-130) (MSEP & UCI)

Section B—Conducting Reviews

4. Annual Reviews. Center level technical compliance reviews will be conducted yearly. Reviews will be spaced approximately midway between MSEP Inspections. These reviews, essentially a process/system audit, are intended to facilitate a center wide evaluation of program implementation and effectiveness in the key processes listed above. Evidence of compliance with the above regulatory references and MSEP/UCI checklist gathered via sample inspections, PAC, SSQ, training reviews, **Attachment 1** metrics, and other related data collected throughout the year will form the basis of the assessment. The reviews are planned, coordinated, and executed by the Center QA Focal Point. Review teams will be composed of the various disciplines subject matter experts (SME) and supplemented by quality assurance evaluators and augmentees as needed. Personnel will not be assigned to the team assessing their own organization unless accompanied by other team members.

5. Continuous Reviews. The ALC QA Manual will list the types of ongoing quality assessments to be performed by the Product Directorate/ Divisions and the frequency of the reports required to be provided to the Center QA Focal Point for review IAW AFMCI 21-115.

Section C—Data

6. Metrics. Data collection and analysis is required to establish the efficiency and effectiveness of the maintenance processes reviewed. This data will provide regular feedback to management on the health of the process and provide the review teams a means to evaluate performance. Mandatory metrics, criteria, level/frequency of reporting and other pertinent information is in **Attachment 1** of this instruction.

7. Data Analysis. The internal review members are assisted as necessary by technical experts to perform the analysis. Care should be taken to determine root causes of deficiencies rather than simply treating symptoms. Once individual questions are analyzed, attention must be directed to determine systemic weaknesses and needed corrective actions.

8. Reporting.

8.1. Yearly Reviews. The timeframe for completing the annual review is at the discretion of each center. Review results are sent to HQ AFMC/LG within 60 days after completion of the yearly review. The following information will be provided to HQ AFMC/LG:

8.1.1. Executive summary to include an assessment of the four technical compliance areas: (1) technical data and work control documents (WCD), (2) personnel qualification and certification, (3) tools and equipment, and (4) process discipline.

8.1.2. Recommendations for policy changes or additions.

8.1.3. Training and Production Acceptance Certification (PAC) oversight reporting requirements of AFMCI 21-108.

8.1.4. A current copy of the ALC QA manual as required by AFMCI 21-115.

8.2. Metrics. Metric summaries are due by 31 January of each year for the previous calendar year. (RCS: MTC-(AR) 9302 applies). The following information is reported:

8.2.1. Metric data required by **Attachment 1** for the calendar year by period collected (i.e. monthly, quarterly).

THOMAS W. BATTERMAN, SES
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Attachment 1

DEPOT MAINTENANCE TECHNICAL COMPLIANCE REVIEW METRICS

A1.1. The depot maintenance technical compliance metrics provide management a set of indicators for maintenance process control. The metrics are categorized in the four categories shown below. The required periodic reporting to the levels specified by each metric will provide management the visibility to identify and correct problems in these four areas. The collection, analysis, and reporting of these metrics is mandatory. Some of these metrics may depend on the results of evaluations and inspections performed by quality assurance as outlined in AFMCI 21-115. When data based on core inspection results is included in the metrics, the inspection must be extensive enough to provide meaningful information about the compliance level of the area inspected. Only the following metrics are required for satisfying the annual metric report requirements found in paragraph **8.2.** of this instruction. Additional detail and display options may be used locally to gain the most benefit from this effort. Monthly reviews will be conducted at Center Division level for all core inspections completed.

A1.1.1. Technical Data. The metrics in this category will tell management if the technical data in use is current and accurate. Related reference - AFMCI 21-110, *Depot Maintenance Technical Data and Work Control Documents (WCD)* and applicable MSEP checklists.

A1.1.1.1. Technical Order Currency:

A1.1.1.1.1. Purpose: Determine the currency of technical orders in use in depot maintenance production.

A1.1.1.1.2. Formula: {(number of quality inspections of technical data inspected and rated QAR-1) divided by (number of quality inspections performed)} times 100 equals the percentage of current technical data in use.

A1.1.1.1.2.1. Reporting period:

A1.1.1.1.2.2. AFMC – Annually.

A1.1.1.1.2.3. ALC – Quarterly.

A1.1.1.1.2.4. Product Directorate/Division – Quarterly/Monthly.

A1.1.1.2. Work Control Document (WCD) Accuracy, Currency and Usability:

A1.1.1.2.1. Purpose: Determine the accuracy, currency and usability of WCDs in use in depot maintenance production.

A1.1.1.2.2. Formula: {(number of quality inspections of WCDs inspected and rated QAR-1) divided by (number of quality inspections performed)} times 100 equals the percentage of accurate, current and usable WCDs.

A1.1.1.2.2.1. Reporting period:

A1.1.1.2.2.2. AFMC – Annually

A1.1.1.2.2.3. ALC – Quarterly

A1.1.1.2.2.4. Product Directorate/Division – Quarterly/Monthly

A1.1.2. Tools and Equipment. The metrics in this category will tell management if the tools and equipment are the right ones and in serviceable condition. Related references:

- Tool Control and Accountability (AFMCI 21-107).

- Foreign Object Damage (FOD) Prevention (AFMCI 21-122).

- Depot Maintenance Plant Management (AFMCI 21-127).

- Equipment Maintenance Material Control (AFMCI 21-130).

- Applicable MSEP checklists.

A1.1.2.1. Lost Tool Performance:

A1.1.2.1.1. Purpose: Determine tool control effectiveness by tracking Open Lost Tool Reports versus Closed Lost Tool Reports per reporting period.

A1.1.2.1.2. Chart: (1) Number of Open Lost Tool Reports (2) Number of Closed Lost Tool Reports

A1.1.2.1.2.1. Reporting period:

A1.1.2.1.2.2. AFMC - Annually

A1.1.2.1.2.3. ALC – Quarterly

A1.1.2.1.2.4. Product Directorate/Division – Quarterly/Monthly

A1.1.2.2. Tool Kit Performance:

A1.1.2.2.1. Purpose: Determine the effectiveness of the toolbox control process by tracking inspection results.

A1.1.2.2.2. Formula: {(number of tool kits (individual and consolidated) inspected during quality inspections and rated QAR-1) divided by (number of tool kits inspected)} times 100 equals the percent of acceptable tool kits.

A1.1.2.2.2.1. Reporting period:

A1.1.2.2.2.2. AFMC - Annually

A1.1.2.2.2.3. ALC - Quarterly

A1.1.2.2.2.4. Product Directorate/Division – Quarterly/Monthly

A1.1.3. Training and Qualification. The metrics in this category will tell management if the maintenance workforce has the technical expertise and is capable of proficient task accomplishment. Related reference - Maintenance Training and Production Acceptance Certification (AFMCI 21-108) and applicable MSEP checklists.

A1.1.3.1. PAC Documentation Review:

A1.1.3.1.1. Purpose: Determine the PAC qualification currency by tracking inspection results.

A1.1.3.1.2. Formula: {(number of PAC records inspected and rated QAR-1) divided by (number of PAC records inspected)} times 100 equals the percentage of acceptable PAC records.

A1.1.3.1.2.1. Reporting period:

A1.1.3.1.2.2. AFMC - Annually

A1.1.3.1.2.3. ALC - Quarterly

A1.1.3.1.2.4. Product Directorate/Division – Quarterly/Monthly

A1.1.3.2. PAC Decertification Trend:

A1.1.3.2.1. Purpose: Assess worker qualification by tracking workmanship and overdue training decertification actions.

A1.1.3.2.2. Chart: (1) Number of workmanship decertifications during the reporting period. (2) Number of decertifications during the reporting period for over-due training (due to RTRs and SSQs).

A1.1.3.2.2.1. Reporting period:

A1.1.3.2.2.2. AFMC - Annually

A1.1.3.2.2.3. ALC - Quarterly

A1.1.3.2.2.4. Product Directorate/Division – Quarterly/Monthly

A1.1.3.3. Maintenance Technical Training Course Material Currency:

A1.1.3.3.1. Purpose: Determine the currency of training course materials (including SSQ and SOJT) by tracking the status of the biennial (every two years) training course material validation.

A1.1.3.3.2. Formula: {(the number of courses that are currently valid) divided by (the total number of courses the center is OPR for)} times 100 equals percent of training courses validated for currency.

A1.1.3.3.2.1. Reporting period:

A1.1.3.3.2.2. AFMC - Annually

A1.1.3.3.2.3. ALC - Quarterly

A1.1.3.3.2.4. Product Directorate/Division – Quarterly/Monthly

A1.1.3.4. Task Evaluations Performance:

A1.1.3.4.1. Purpose: Determine the technical compliance level of tasks accomplished by mechanics by tracking inspection results.

A1.1.3.4.2. Formula: {(number of task evaluations QAR-1) divided by (number of task evaluations conducted)} times 100 equals percent of acceptable task evaluations.

A1.1.3.4.2.1. Reporting period:

A1.1.3.4.2.2. AFMC - Annually

A1.1.3.4.2.3. ALC - Quarterly

A1.1.3.4.2.4. Product Directorate/Division – Quarterly/Monthly

A1.1.4. Process Discipline. The metrics in this category will tell management if the maintenance workforce is executing tasks and producing products in accordance with technical data and other

directives. Related reference - AFMCI 21-115, Depot Maintenance Quality Assurance (QA) and applicable MSEP checklists.

A1.1.4.1. Quality Verification Inspection (QVI) Performance:

A1.1.4.1.1. Purpose: Determine the technical compliance level of all QVIs accomplished by tracking inspection results.

A1.1.4.1.2. Chart: (1) Number of QVIs rated QAR-1. (2) Number of QVIs rated QAR-2. (3) Number of QVIs rated QAR-3. (4) Percentage of QVIs rated QAR-1 {(number of QVIs rated QAR-1) divided by (total number of QVIs conducted)} times 100 equals percentage of QVIs receiving acceptable rating.

A1.1.4.1.2.1. Reporting period:

A1.1.4.1.2.2. AFMC - Annually

A1.1.4.1.2.3. ALC - Quarterly

A1.1.4.1.2.4. Product Directorate/Division – Quarterly/Monthly